

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: March 1, 2001, 16:20:13 ; Search time 52.2 Seconds  
(without alignments)  
28.617 Million cell updates/sec

Title: US-09-331-631a-39

Perfect score: 34

Sequence: 1 CXXXXXXXXXXXXXXXXXXC

Scoring table: BLOSUM62DX  
Gapop 10.0 , Gapext 0.5

Searched: 195891 seqs, 6790655 residues

Total number of hits satisfying chosen parameters: 195891

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :  
1: p1r1:  
2: p1r2:  
3: p1r3:  
4: p1r4:

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	54	100.0	40	1 SMFP	metallothionein Mt
2	54	100.0	40	2 B61194	metallothionein 1B
3	54	100.0	43	1 SMFE2	metallothionein 2
4	54	100.0	44	2 I48945	cellular disintegr
5	54	100.0	44	2 I48942	cellular disintegr
6	54	100.0	46	2 I48947	cellular disintegr
7	54	100.0	47	2 JC5557	arginine/glutamate
8	54	100.0	52	2 S65712	metallothionein 1
9	54	100.0	53	2 S01179	hypothetical prote
10	54	100.0	55	2 S25774	testis-specific pr
11	54	100.0	57	1 SMK2D5	metallothionein 2
12	54	100.0	57	1 S59073	metallothionein 1
13	54	100.0	58	1 SMK2D5	metallothionein 1
14	54	100.0	58	1 S59072	metallothionein 1
15	54	100.0	58	2 A37039	metallothionein 1
16	54	100.0	58	2 S43367	metallothionein 1
17	54	100.0	61	1 SMH1B	metallothionein 1B
18	54	100.0	63	2 S25772	testis-specific pr
19	54	100.0	64	2 A25775	metallothionein A
20	54	100.0	64	2 A33825	metallothionein A
21	54	100.0	66	2 S36866	metallothionein A
22	54	100.0	66	2 S59621	metallothionein is
23	54	100.0	67	2 T11547	metallothionein is
24	54	100.0	68	2 S07807	testis-specific pr
25	54	100.0	68	2 S47576	WDNM1 protein - ra
26	54	100.0	71	2 S47577	metallothionein 20
27	54	100.0	71	2 S39420	metallothionein 20
28	54	100.0	71	2 S39420	metallothionein 20
29	54	100.0	71	2 S39422	metallothionein 20

30	54	100.0	71	2 S39421	metallothionein 20
31	54	100.0	74	2 S25773	testis-specific pr
32	54	100.0	74	2 S61553	probable proteins
33	54	100.0	75	2 S17156	metallothionein -
34	54	100.0	75	2 T21519	hypothetical prote
35	54	100.0	76	2 T09262	glycine-rich cell
36	54	100.0	76	2 T03860	hypothetical prote
37	54	100.0	86	2 T25303	TA20 protein - com
38	54	100.0	87	2 T00564	hypothetical prote
39	54	100.0	90	2 T25304	hypothetical prote
40	54	100.0	93	2 JE0159	giberellin-stimul
41	54	100.0	93	2 T06275	benzothiadiazole-1
42	54	100.0	95	2 T15330	hypothetical prote
43	54	100.0	96	2 S43910	giberellin-regula
44	54	100.0	97	2 S71371	giberellin-regula
45	54	100.0	98	2 S60229	giberellin-regula

## ALIGNMENTS

RESULT 1  
SMFP  
metallothionein Mtn - fruit fly (Drosophila melanogaster)  
N:Alternate names: MT  
C:Species: Drosophila melanogaster  
C:Date: 17-Mar-1987 #sequence-revision 17-Mar-1987 #text-change 22-Jun-1999  
C:Accession: A25294; A03285; A48734; A61194  
R:Maroni, G.; Otto, E.; Lastowski-Perry, D.  
Genetics 112, 493-504, 1986  
A:Title: Molecular and cytogenetic characterization of a metallothionein gene of Dros  
A:Reference number: A25294; MUID:86165787  
A:Accession: A25294  
A:Molecule type: DNA  
A:Residues: 1-40 <MAR>  
A:Cross-references: GB:X03758; GB:M12964; NID:98272; PIDN:CAA27391.1; PID:98273  
R:Lastowski-Perry, D.; Otto, E.; Maroni, G.  
J. Biol. Chem. 260, 1527-1530, 1985  
A:Title: Nucleotide sequence and expression of a Drosophila metallothionein.  
A:Reference number: A03285; MUID:85105016  
A:Accession: A03285  
A:Molecule type: mRNA  
A:Residues: 1-40 <LAS>  
A:Cross-references: GB:K02314; GB:M35390; NID:9157876; PIDN:AAA28681.1; PID:9157877  
A:Experimental source: Samarkand stock, larva  
A:Note: this allele is designated Mtn-1  
R:Maroni, G.; Lastowski-Perry, D.; Otto, E.; Watson, D.  
Environ. Health Perspect. 65, 107-116, 1986  
A:Title: Effects of heavy metals on Drosophila larvae and a metallothionein cDNA.  
A:Reference number: A48734; MUID:86219988  
A:Accession: A48734  
A:Molecule type: mRNA  
A:Residues: 1-40 <MA2>  
A:Cross-references: GB:K02314; NID:9157876; PIDN:AAA28681.1; PID:9157877  
R:Theodore, L.; Ho, A.S.; Maroni, G.  
Genet. Res. 58, 203-210, 1991  
A:Title: Recent evolutionary history of the metallothionein gene Mtn in Drosophila.  
A:Reference number: A61194; MUID:92201681  
A:Accession: A61194  
A:Molecule type: DNA  
A:Residues: 1-39, 'K' <THE>  
A:Cross-references: GB:M69015; NID:9157915; PIDN:AA841334.1; PID:9157916  
A:Note: This allele is designated Mtn-3  
C:Comment: This protein binds cations of several transition elements.  
C:Comment: All cysteine residues are arranged in C-X-C groups. These are thought to b  
C:Genetics:  
A:Gene: Mtn  
A:Cross-references: FlyBase:FBgn0002868  
A:Map position: 3R 85E10-15  
A:Introns: 8/1  
A:Note: Several alleles of Mtn are known; the metallothionein gene Mtn is very distan  
C:Superfamily: metallothionein  
C:Keywords: chelation; metal binding



RESULT 6  
148947  
cellular disintegrin-related protein 40 - mouse (fragment)  
C:Species: Mus musculus (house mouse)  
C:Date: 15-Mar-1996 #sequence\_revision 15-Mar-1996 #text\_change 20-Sep-1999  
C:Accession: I48947  
R:Meskamp, G.; Blobel, C.P.  
Proc. Natl. Acad. Sci. U.S.A. 91, 2748-2751, 1994  
A:Title: A new family of cellular proteins related to snake venom disintegrins.  
A:Reference number: A53476; MUID:94195820  
A:Accession: I48947  
A:Status: preliminary  
A:Molecule type: mRNA  
A:Residues: 1-46 <RES>  
A:Cross-references: EMBL:U06149; NID:9487146; PIDN:AAA18428.1; PID:9487147  
C:Superfamily: unassigned disintegrins; disintegrin homology

Query Match 100.0%; Score 54; DB 2; Length 46;  
Best Local Similarity 18.2%; Pred. No. 1.5e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

OY 1 CXXXCXXXXXXXXXXCXXC 22  
|::|::|::|::|::|::|::|::|  
Db 11 CSSDCVLKPGACAFGLCKNC 32

RESULT 7  
JC5557  
arginine/glutamate-rich 6.5K polypeptide - smooth loofah  
C:Species: Luffa cylindrica (smooth loofah)  
C:Date: 02-Sep-1997 #sequence\_revision 05-Sep-1997 #text\_change 07-May-1999  
C:Accession: JC5557  
R:Kimura, M.; Park, S.S.; Sakai, R.; Yamasaki, N.; Funatsu, G.  
Bioosci. Biotechnol. Biochem. 61, 984-988, 1997  
A:Title: Primary structure of 6.5K-arginine/glutamate-rich polypeptide from the seeds of  
A:Reference number: JC5557; MUID:97357433  
A:Accession: JC5557  
A:Molecule type: protein  
A:Residues: 1-47 <KIM>  
A:Experimental source: seed  
C:Comment: This protein is a storage protein which provides nitrogen and carbon reserves  
F/12-33,16-29/disulfide bonds: #status predicted

Query Match 100.0%; Score 54; DB 2; Length 47;  
Best Local Similarity 18.2%; Pred. No. 1.5e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

OY 1 CXXXCXXXXXXXXXXCXXC 22  
|::|::|::|::|::|::|::|::|  
Db 12 CRVRCQVAHEGVEKORRCQVC 33

RESULT 8  
S65712  
metallothionein 1 - rat (fragments)  
C:Species: Rattus norvegicus (Norway rat)  
C:Date: 06-Dec-1996 #sequence\_revision 13-Mar-1997 #text\_change 09-May-1997  
C:Accession: S65712  
R:Saito, S.; Hunziker, P.E.  
Biochim. Biophys. Acta 1289, 65-70, 1996  
A:Title: Differential sensitivity of metallothionein-1 and -2 in liver of zinc-injected  
A:Reference number: S65712; MUID:96195842  
A:Accession: S65712  
A:Status: preliminary  
A:Molecule type: protein  
A:Residues: 1-23;24-46;47-52 <SAT>  
C:Superfamily: metallothionein  
C:Keywords: blocked amino end

Query Match 100.0%; Score 54; DB 2; Length 52;  
Best Local Similarity 18.2%; Pred. No. 1.6e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

OY 1 CXXXCXXXXXXXXXXCXXC 22  
|::|::|::|::|::|::|::|::|  
Db 13 CSSSCGCKNCKKSCCPCVGC 34

RESULT 9  
S01179  
hypothetical protein P-5 - Chlamydia trachomatis plasmid pLGV440  
C:Species: Chlamydia trachomatis  
C:Date: 30-Jun-1989 #sequence\_revision 30-Jun-1989 #text\_change 18-Jun-1993  
C:Accession: S01179  
R:Hatt, C.; Ward, M.E.; Clarke, I.N.  
Nucleic Acids Res. 16, 4053-4067, 1988  
A:Title: Analysis of the entire nucleotide sequence of the cryptic plasmid of Chlamyd  
A:Reference number: S00788; MUID:88233998  
A:Accession: S01179  
A:Molecule type: DNA  
A:Residues: 1-53 <HAT>  
A:Cross-references: EMBL:X06707  
C:Genetics:  
A:Genome: plasmid

Query Match 100.0%; Score 54; DB 2; Length 53;  
Best Local Similarity 18.2%; Pred. No. 1.6e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

OY 1 CXXXCXXXXXXXXXXCXXC 22  
|::|::|::|::|::|::|::|::|  
Db 13 CNDACKCIPKKNALPKCIKVC 34

RESULT 10  
S25774  
testis-specific protein Mst84Dc - fruit fly (Drosophila melanogaster)  
C:Species: Drosophila melanogaster  
C:Date: 26-Jul-1996 #sequence\_revision 26-Jul-1996 #text\_change 20-Aug-1999  
C:Accession: S25774; C56565  
R:Kuhn, R.; Kuhn, C.; Boersch, D.; Glaetzer, K.H.; Schaefer, U.; Schaefer, M.  
Mech. Dev. 35, 143-151, 1991  
A:Title: A cluster of four genes selectively expressed in the male germ line of Droso  
A:Reference number: A56565; MUID:92102953  
A:Accession: S25774  
A:Molecule type: DNA  
A:Residues: 1-55 <RUH>  
A:Cross-references: EMBL:X67703; NID:911072; PIDN:CAA47939.1; PID:911075  
A:Note: the authors translated the codon TGC for residue 55 as Thr  
C:Genetics:  
A:Gene: Mst84Dc  
A:Cross-references: FlyBase:FBgn0004174  
A:Map position: 3  
C:Superfamily: fruit fly testis-specific protein  
C:Keywords: spermatogenesis; tandem repeat

Query Match 100.0%; Score 54; DB 2; Length 55;  
Best Local Similarity 18.2%; Pred. No. 1.6e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

OY 1 CXXXCXXXXXXXXXXCXXC 22  
|::|::|::|::|::|::|::|::|  
Db 15 CGPCGCGPCRCGCGSCGCGC 36

RESULT 11  
SMKD25  
metallothionein 2 - mud crab

C:Species: Scylla serrata (mud crab)  
C:Date: 19-Feb-1984 #sequence\_revision 19-Feb-1984 #text\_change 13-Sep-1996  
C:Accession: A03284  
R:lerch, K.; Ammer, D.; Olafson, R.W.  
J. Biol. Chem. 257, 2420-2426, 1982  
A:Title: Crab metallothionein. Primary structures of metallothioneins 1 and 2.  
A:Reference number: A92363; MUID:82142340  
A:Accession: A03284  
A:Molecule type: protein  
A:Residues: 1-57 <LER>  
C:Superfamily: metallothionein  
C:Keywords: metal binding

Query Match 100.0%; Score 54; DB 1; Length 57;  
Best Local Similarity 18.2%; Pred. No. 1.7e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;  
QY 1 CXXXCXXXXXXXXXXCXXC 22  
1:::1:::1:::1:::1:::1:::1  
DB 16 CRTGCKTSCRCPCPCSSGC 37

RESULT 12  
S59073  
C:Species: Callinectes sapidus (blue crab)  
C:Date: 19-Mar-1997 #sequence\_revision 19-Mar-1997 #text\_change 07-May-1999  
C:Accession: S59073  
R:Brouwer, M.; Enghild, J.; Hoexum-Brouwer, T.; Thøgersen, I.; Truncali, A.  
Biochem. J. 311, 617-622, 1995  
A:Title: Primary structure and tissue-specific expression of blue crab (Callinectes sapidus) metallothionein isoform IIA - blue crab  
A:Reference number: S59072; MUID:96033062  
A:Accession: S59073  
A:Molecule type: protein  
A:Residues: 1-57 <BRO>  
C:Superfamily: metallothionein  
C:Keywords: metal binding

Query Match 100.0%; Score 54; DB 2; Length 57;  
Best Local Similarity 18.2%; Pred. No. 1.7e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;  
QY 1 CXXXCXXXXXXXXXXCXXC 22  
1:::1:::1:::1:::1:::1:::1  
DB 16 CRTGCKCKSCRCPCDKSSEC 37

RESULT 13  
SMKD15  
C:Species: Scylla serrata (mud crab)  
C:Date: 29-Jul-1981 #sequence\_revision 29-Jul-1981 #text\_change 13-Sep-1996  
C:Accession: A03283  
R:lerch, K.; Ammer, D.; Olafson, R.W.  
J. Biol. Chem. 257, 2420-2426, 1982  
A:Title: Crab metallothionein. Primary structures of metallothioneins 1 and 2.  
A:Reference number: A92363; MUID:82142340  
A:Accession: A03283  
A:Molecule type: protein  
A:Residues: 1-58 <LER>  
A:Note: The five Cys-X-Cys sequences are believed to be the principal metal-binding site  
C:Superfamily: metallothionein  
C:Keywords: metal binding

Query Match 100.0%; Score 54; DB 1; Length 58;  
Best Local Similarity 18.2%; Pred. No. 1.7e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

QY 1 CXXXCXXXXXXXXXXCXXC 22  
1:::1:::1:::1:::1:::1:::1

DB 16 CKEGCOCTSCRCSPCKSSGC 37

RESULT 14  
S59072  
C:Species: Callinectes sapidus (blue crab)  
C:Date: 19-Mar-1997 #sequence\_revision 19-Mar-1997 #text\_change 07-May-1999  
C:Accession: S59072  
R:Brouwer, M.; Enghild, J.; Hoexum-Brouwer, T.; Thøgersen, I.; Truncali, A.  
Biochem. J. 311, 617-622, 1995  
A:Title: Primary structure and tissue-specific expression of blue crab (Callinectes sapidus) metallothionein isoform Ia - blue crab  
A:Reference number: S59072; MUID:96033062  
A:Accession: S59072  
A:Molecule type: protein  
A:Residues: 1-58 <BRO>  
C:Superfamily: metallothionein  
C:Keywords: metal binding

Query Match 100.0%; Score 54; DB 2; Length 58;  
Best Local Similarity 18.2%; Pred. No. 1.7e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

QY 1 CXXXCXXXXXXXXXXCXXC 22  
1:::1:::1:::1:::1:::1:::1  
DB 16 CKAGCCTSCRCSPCKCTSGC 37

RESULT 15  
A37039  
C:Species: Homarus americanus (American lobster)  
C:Date: 31-Jan-1992 #sequence\_revision 31-Jan-1992 #text\_change 12-Apr-1995  
C:Accession: A37039  
R:Brouwer, M.; Winge, D.R.; Gray, W.R.  
J. Inorg. Biochem. 35, 289-303, 1989  
A:Title: Structural and functional diversity of copper-metallothioneins from the American lobster  
A:Reference number: A37039; MUID:89215793  
A:Accession: A37039  
A:Status: preliminary  
A:Molecule type: protein  
A:Residues: 1-58 <BRO>  
C:Superfamily: metallothionein

Query Match 100.0%; Score 54; DB 2; Length 58;  
Best Local Similarity 18.2%; Pred. No. 1.7e+02;  
Matches 4; Conservative 18; Mismatches 0; Indels 0; Gaps 0;

QY 1 CXXXCXXXXXXXXXXCXXC 22  
1:::1:::1:::1:::1:::1:::1  
DB 16 CRTGCKTSCRCAPCEKCTSGC 37

Search completed: March 1, 2001, 16:20:14  
Job time: 322 sec